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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/536,709	05/27/2005	Paul Daniel Baxter	05-454	2840
20306 7590 02/15/2007 MCDONNELL BOEHNEN HULBERT & BERGHOFF LLP 300 S. WACKER DRIVE 32ND FLOOR CHICAGO, IL 60606			EXAMINER SUAREZ, FELIX E	
			ART UNIT 2857	PAPER NUMBER
SHORTENED STATUTORY PERIOD OF RESPONSE		MAIL DATE	DELIVERY MODE	
3 MONTHS		02/15/2007	PAPER	

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

<b>Office Action Summary</b>	<b>Application No.</b>		<b>Applicant(s)</b>	
	10/536,709		BAXTER ET AL.	
	<b>Examiner</b>		<b>Art Unit</b>	
	Felix E. Suarez		2857	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 08 December 2006.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-28 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-28 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 27 May 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                       | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | Paper No(s)/Mail Date. _____                                      |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>08December2006</u> .  | 6) <input type="checkbox"/> Other: _____                          |

## **DETAILED ACTION**

### ***Minor Informalities***

1. The disclosure is objected to because of the following informalities:

In Claim 11 page 5 line 18 the phrase "decorrelation, and if" should be – decorrelation; and c) if --.

In Claim 20 page 7 line 24 the phrase "decorrelation, and if" should be – decorrelation; and c) if --.

Appropriate correction is suggested.

### ***Withdrawal of allowability of claims, Non Final Rejection on new ground(s)***

2. The indicated allowability of claims 11-19, are withdrawn and Non Final Rejection is made in view of new ground(s). Rejections based on new ground(s) follow.

### ***Claim Rejections - 35 USC § 101***

35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

3. Claims 1-28 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

A process is statutory if it requires physical acts to be performed outside the computer independent of and following the steps to be performed by a programmed computer, where those acts involve the manipulation of tangible physical objects and result in the object having a different physical attribute or structure. *Diamond v. Diehr*, 450 U.S. at 187, 209 USPQ at 8 (see MPEP 2106). A claim is limited to a practical application when the method, as claimed, produces a concrete, tangible and useful result; i.e., the method recites a step or act of producing something that is concrete, tangible and useful. In determining whether the claim is a "practical application," the focus is not on whether the steps taken to achieve a particular result are useful, tangible and concrete, but rather that the final achieve by the claimed invention is "useful, tangible and concrete." For an invention to be "useful" it must satisfy the utility requirement of section 35 U.S.C. 101, the invention is useful based on the utility is specific, substantial and credible (see MPEP 2107); for an invention to be "tangible" the process claimed must set forth a practical application to produce a real-world result, "An application of a law of nature or mathematical formula to a process may well be deserving of patent protection" *Dier*, 450 U. S. at 187, 209 USPQ at 8; and for "concrete" the process must have a result that can be substantially repeatable or the process must substantially produce the same result again.

The claimed invention recites a method (or computer apparatus or computer program product) of strong decorrelation of input signals, the method including the steps of:

processing the input signals to determine delay and rotation parameters which implement at least one elementary paraunitary matrix to obtain improvement in a measure of strong decorrelation;

assessing the improvement in the measure of strong decorrelation; and

if the improvement is significant designating the output signals as input signals, and if the improvement is not significant the output signals as signals decorrelated.

The claimed invention recites; processing input signals through a matrix mathematical application to obtain improvement in a measure of strong decorrelation, assessing the improvement; and after these steps, proceeds, to establish a comparison with the output signals, if the improvement is significant designating the output signals as input signals, and if the improvement is not significant designating the output signals as decorrelated signals; but the claimed invention does not result in a physical transformation outside the computer; the only application of the mathematical formula does not produce a real-world or tangible result, and the claimed invention does not recite a useful, concrete and tangible result.

#### ***Response to Arguments***

4. This action is responsive to papers filed December 08, 2006.

5. Applicant's arguments filed December 08, 2006 have been fully considered but they are moot in view of the new ground(s) of rejection set forth hereinbefore.

The Examiner has thoroughly reviewed applicant arguments; and the Examiner considers that they are not persuasive respect to amended claims 20-28, because the claimed invention is directed to an abstract idea or mathematical formula application; but does not recite a practical application of an abstract idea, that produces a useful, concrete and tangible result.

### ***Conclusion***

#### ***Prior Art***

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Fekri et al. (U.S. patent No. 6,898,756) describes a method for enabling efficient error correlation.

Kabel et al. (U.S. Patent No. 6,792,057) describes a low pass interpolation filter.

Kober et al. (U.S. Patent No. 6,549,151) describes a paraunitary matrix.

Xia et al. (U.S. Patent No. 6,493,399) describes a polynomial matrix of a delay variable.

Velazquez et al. (U.S. Patent No. 6,473,013) describes discrete-time analog signals.

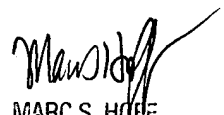
7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Felix Suarez, whose telephone number is (571) 272-2223. The examiner can normally be reached on weekdays from 8:30 a.m. to 5:00 p.m.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Marc Hoff can be reached on (571) 272-2216. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300 for regular communications and for After Final communications.

February 6, 2007

FS

  
MARC S. HOFF  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 2600